AN EYE CENTRAL CASE REPORT

Post-Cataract Surgery Iritis

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Abstract

Iritis, also known as anterior uveitis, is an inflammatory process of the uvea that primarily affects the iris. This condition is characterized by the presence of inflammatory markers in the anterior chamber of the eye, with patients reporting pain, blurry vision, redness, and photophobia as the predominant symptoms. The etiology can range from autoimmune disease and blunt trauma to invasive surgical procedures such as cataract extraction. This case report focuses on the diagnosis, treatment, and management of postoperative iritis following cataract surgery at Eye Central.

Keywords: Iritis, Anterior Uveitis, Cataract Surgery, Postoperative Inflammation, Rebound Iritis

Introduction

The iris is the colored structure of the eye that regulates the amount of light transmitted through the pupil. It forms the anterior part of the middle layer of the eye, known as the uvea. The uvea also comprises the choroid (posterior uvea) and ciliary body (intermediate uvea). Inflammation of the iris is termed iritis or anterior uveitis and is responsible for greater than 90% of all uveitis cases, with approximately 48.7% occurring postoperatively following cataract surgery.

Case Report

Initial Visit: December 5, 2024

A 66-year-old African-American female presented to the clinic with symptoms of pain and aching around the brow, blurred vision, and photophobia in the right eye. She also mentioned wearing sunglasses both indoors and outdoors to manage her symptoms. The patient denied flashes, floaters, or any history of ocular trauma. She had undergone cataract extraction in the right eye on October 20, 2024. Following her cataract procedure, she was prescribed moxifloxacin 0.5% four times daily for one week, bromfenac 0.09% twice daily for two weeks, and prednisolone acetate suspension 1.0% four times daily for one week, tapered to twice daily for one week, then once daily for the final week.

Her last follow-up with the surgeon was two weeks before this presentation, at which time she was instructed to discontinue all drops and to obtain reading glasses if desired. Postoperative notes indicated a visual acuity of 20/20-1 OD and 20/25 OS, with a well-centered posterior chamber IOL and a quiet anterior chamber. Her ocular history included dry eye disease and early open-angle glaucoma in both eyes. Active topical medications at this visit were latanoprost 0.005% every night and over-the-counter preservative-free Refresh lubricating drops as needed. She had also undergone cataract extraction with IOL implantation in the left eye in September 2021 without complications. Medical history was positive for hypercholesterolemia, managed with oral simvastatin 20 mg daily. No known medication allergies were reported. Social history was negative for alcohol and tobacco use. Family history was positive for cardiovascular disease (father).

Clinical Findings

Uncorrected entrance distance visual acuity was 20/50 OD with no improvement on pinhole testing and 20/25 OS, improving to 20/20 with pinhole. Ocular motility was full and unrestricted, with no pain or diplopia reported. Confrontation visual field testing was full to finger count in both eyes. Pupil testing revealed no afferent pupillary defect; however, the right pupil was more miotic in dim light conditions (2.0 mm OD vs. 2.5 mm OS).

Intraocular pressure by Goldmann tonometry was 15 mmHg OD and 19 mmHg OS at 1:15 pm. Slit-lamp biomicroscopy revealed normal adnexa in both eyes. The bulbar and palpebral conjunctiva were clear OS, with 2+ circumlimbal injection noted OD. Corneal evaluation with a sodium fluorescein strip showed trace superficial punctate staining in both eyes. Anterior chamber assessment revealed 2+ cells with no flare and no granulomatous findings OD; the anterior chamber OS was deep and quiet. No posterior or anterior synechiae were noted.

Van Herick technique assessment of the anterior chamber angle revealed Grade IV open angles in both eyes. The patient was dilated with 2.5% phenylephrine and 1.0% tropicamide at 1:32 pm for posterior segment evaluation. A macular OCT was ordered to rule out Irvine-Gass syndrome. Dilated fundus examination showed the posterior chamber IOL was well-centered bilaterally, with haptics in the capsular bag. No posterior capsular opacification was identified. The vitreous was clear with no floaters. Cup-to-disc ratio was 0.65 OD and 0.70 OS. There was no chorioretinal inflammation to suggest posterior uveal involvement. The macula was clear with a healthy foveal reflex. Macular OCT returned negative for cystoid macular edema or macular pathology.

Differential Diagnoses Considered

Corneal Abrasion: A disruption of the corneal epithelium that presents with pain, redness, blurry vision, and photophobia. Ruled out after corneal staining with sodium fluorescein revealed no epithelial defect consistent with a true abrasion.

Panuveitis: Characterized by inflammation extending beyond the iris to the ciliary body and choroid. The absence of vitreous inflammation and chorioretinal involvement on dilated fundus examination made this diagnosis improbable.

Dislocated IOL: Patients with a dislocated IOL may present with blurred vision, diplopia, and photophobia. Dilated fundus examination confirmed the IOL was well-centered with haptics securely in the capsular bag in both eyes.

Endophthalmitis: An ocular emergency characterized by infectious inflammation of the globe, which can occur following cataract surgery. Signs include anterior and posterior segment inflammation, hypopyon, and corneal edema. This was ruled out due to the restriction of inflammation to the anterior segment and the absence of hypopyon or vitreous involvement.

Diagnosis and Management

A diagnosis of rebound iritis following cataract extraction in the right eye was established. Anterior chamber reaction and ciliary spasm were identified as the primary drivers of the patient's symptoms. The patient was restarted on prednisolone acetate suspension 1.0% four times daily OD, with a slow taper over 5 weeks: 4 times daily for week 1, 3 times daily for week 2, twice daily for week 3, once daily for week 4, and every other day for week 5. Latanoprost 0.005% was suspended given its known pro-inflammatory properties and potential to cause or exacerbate ocular inflammation. Brimonidine tartrate 0.2% twice daily in both eyes was initiated for IOP control and was to be continued until complete resolution of inflammation and completion of the steroid taper. The patient was counseled on the importance of shaking the prednisolone acetate suspension bottle before each instillation. A follow-up appointment was scheduled for one week, with instructions to call the clinic if symptoms worsened.

Follow-up Visit: December 13, 2024

The patient returned one week later and reported that pain and photophobia had subsided, with vision notably clearer in the right eye. She was compliant with brimonidine tartrate 0.2% twice daily and was in the thrice-daily dosing phase of prednisolone acetate 1.0%. Entrance visual acuity was 20/25+ OD (20/20-2 on pinhole) and 20/25 OS (20/20 on pinhole). Slit-lamp examination showed clear bulbar and palpebral conjunctiva, a clear cornea in both eyes, trace cell OD with no flare, and a deep and quiet anterior chamber OS. IOP by Goldmann tonometry was 15 mmHg OD and 14 mmHg OS. Dilated fundus examination was not performed at this visit.

Emphasis was again placed on shaking the prednisolone acetate suspension bottle to enhance its efficacy. The patient was advised to complete the steroid regimen as prescribed, with follow-up scheduled in three weeks.

Follow-up Visit: December 30, 2024

At the final follow-up, the patient presented with no complaints. No pain, redness, or photophobia was reported. Her drop regimen at this visit consisted of brimonidine tartrate 0.2% twice daily in both eyes and prednisolone acetate 1.0% once daily OD. Compliance was confirmed. Uncorrected entrance visual acuity was 20/20 OD and 20/25 OS. No active inflammation was noted on slit-lamp biomicroscopy; the bulbar and palpebral conjunctiva were clear, and the cornea and anterior chamber were clear and quiet in both eyes. Subjective refraction findings were +0.25 -0.25 x 090 OD and -0.25 -0.25 x 100 OS. IOP by Goldmann applanation was 17 mmHg OD and 14 mmHg OS.

The patient was instructed to complete the steroid regimen every other day for the final week and to return to the clinic if any concerns arose. An immunoassay workup was not ordered given the clear iatrogenic etiology of the inflammation.

Discussion

In the last decade, there has been a growing reliance on optometrists in the co-management of postoperative cataract patients. Studies indicate that rebound iritis following cataract extraction is one of the most common postoperative complications, which can occur within the first few weeks or months after surgery, particularly following drop cessation. After cataract extraction, patients are typically placed on a combination of broad-spectrum antibiotics (such as moxifloxacin 0.5% or besifloxacin 0.6%), NSAIDs (such as bromfenac 0.09% or diclofenac sodium 0.1%), and steroidal drops (such as prednisolone acetate 1.0% or dexamethasone 0.1%). An increasingly popular alternative is the use of a steroid-antibiotic-NSAID combination drop, typically dosed three to four times daily for three to six weeks.

Steroid drops after cataract surgery are typically tapered over three to six weeks. Even with a slow taper, rebound inflammation can occur anywhere from days to months after drop cessation, and may be linked to poor drop instillation technique, failure to shake suspension drops before use, concomitant use of prostaglandin analogues, or slower physiological healing, as seen in idiopathic persistent iritis after cataract surgery (IPICS). IPICS is more prevalent among patients of African descent and has a female predilection. First-line management of IPICS is an exclusive slow steroid taper over two months; if inflammation persists, systemic immunosuppressive therapy with agents such as meloxicam or methotrexate may be considered. A study by Soifer et al. in 32 IPICS patients found that 46.9% achieved remission with steroids alone, while 53.1% required adjuvant systemic medication.

Treatment of postoperative iritis typically involves restarting or increasing the dose of ophthalmic steroids, initiated at 4 to 8 times daily and slowly tapered over 3 to 8 weeks depending on severity. The majority of patients respond without the need for cycloplegic drops or hourly Pred Forte dosing. In patients with a history of steroid-induced IOP elevation, brimonidine tartrate 0.2% may be prescribed for additional pressure control. Of particular importance in this patient population, glaucoma patients on prostaglandin analogues should have those agents suspended during

treatment, as prostaglandins are known to have pro-inflammatory properties that can trigger or sustain rebound iritis. Follow-up is typically scheduled within one week of initiating treatment, with subsequent visits weekly or biweekly until resolution.

Conclusion

Rebound anterior uveal inflammation in postoperative cataract patients is a well-recognized complication. A thorough patient history and comprehensive ocular examination are essential for accurate diagnosis and appropriate management. An exclusive slow taper of ophthalmic steroid medication achieves remission in the majority of cases. In cases of persistent idiopathic iritis, systemic immunosuppressive therapy may be necessary. Prostaglandin analogues should be suspended during the inflammatory episode to avoid exacerbation, with an alternative IOP-lowering agent used in the interim.

What This Means for You

Cataract surgery is one of the safest and most commonly performed procedures in the world. However, as with any surgery, a healing response can occur in the weeks following the procedure. Rebound iritis is one such response, where the eye becomes inflamed after postoperative drops are stopped. Symptoms include light sensitivity, eye pain, redness, and blurry vision.

The reassuring news is that this condition responds very well to treatment. Restarting anti-inflammatory eye drops for a slightly longer course is typically all that is needed to resolve inflammation and restore comfort. At Eye Central, we provide comprehensive post-cataract co-management to ensure your recovery is as smooth as possible. If you notice any changes in your vision or comfort after cataract surgery, please contact us promptly.

References

1. Grzybowski et al. Graefes Arch Clinical Exp Ophthalmol. 2019.

2. Sidra Zafar et al. Prescribing patterns and costs associated with postoperative eye drop use in Medicare beneficiaries undergoing cataract surgery. Ophthalmology. 2019;27(5):573–581.

3. Kerry D. Solomon et al. Comparing combination drop therapy to a standard drop regimen after routine cataract surgery. Clinical Ophthalmology. 2020;14:1959–1965.

4. Robert D. Fechtner et al. Anterior uveitis associated with latanoprost. American Journal of Ophthalmology, Vol. 126, Issue 1.

5. Matias Soifer et al. Diagnosis and management of idiopathic persistent iritis after cataract surgery. American Journal of Ophthalmology. 2013;234:250–258.

6. Gentian Bajraktari et al. Early and late complications after cataract surgery in patients with uveitis. MDPI. 2023;59:1877.

7. S.L. Smith et al. Latanoprost 0.005% and anterior segment uveitis. Acta Ophthalmologica. Dec 1999;77:668–672.